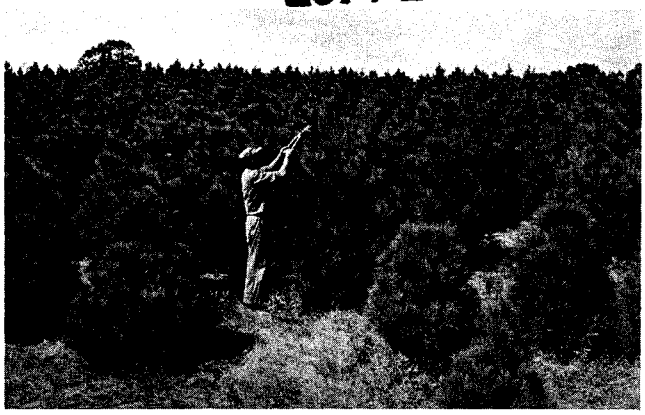
University of Minnesota
Agricultural Extension Service ● U. S. Department of Agriculture
FACT SHEET

FORESTRY NO. 2

MARVIN E. SMITH

Shaping Conifers for Christmas Trees



The final product of the grower's art, Norway pine 8 years after planting, sheared with hedge shears and hand pruners.

Shearing and pruning pine, spruce, and fir are widely accepted cultural techniques used by growers to shape trees to the form and compactness desired by Christmas tree consumers.

Pruning is the complete removal of competing terminal leaders or single branches to correct large defects in a tree's form. Shearing is the cutting back of current growth of the terminal leader and side branches to improve the tree's form and thicken foliage.

SHAPING PINE TREES

The ideal tree shape resembles a cone, wide at the base and tapering uniformly to the top. One drawback of pine is its tendency to grow rapidly. Instead of having compact, dense foliage, the naturally grown tree is usually somewhat spindly with sparse foliage and too great a distance between whorls of branches. To obtain high quality Christmas trees, timely annual shearing and pruning are necessary.

Production of well formed trees through shearing helps you meet increased market competition. Shearing usually raises a tree to the next grade. Since current prices recognize quality, it is wise to produce the best grades. Moreover, shearing makes many trees salable that otherwise would be culls.

When To Shear

Begin shearing when trees average 24 to 30 inches in height. Accelerated height growth starts in the 2nd or 3rd year after planting. This speed-up in growth of the terminal leader is also your clue to start shearing.

If you discover multiple stems, select the best and straightest stem and remove all others. During the first or second shearing, you also should remove bottom branches on the stem below a well formed base whorl to provide a clean 8- to 12-inch handle at the tree's base. Providing a handle is the grower's responsibility--not the consumer's.

Once you've started shearing, do it every year until harvest. Depending on the age of trees at harvest, expect two to four or more annual shearings during the rotation period.

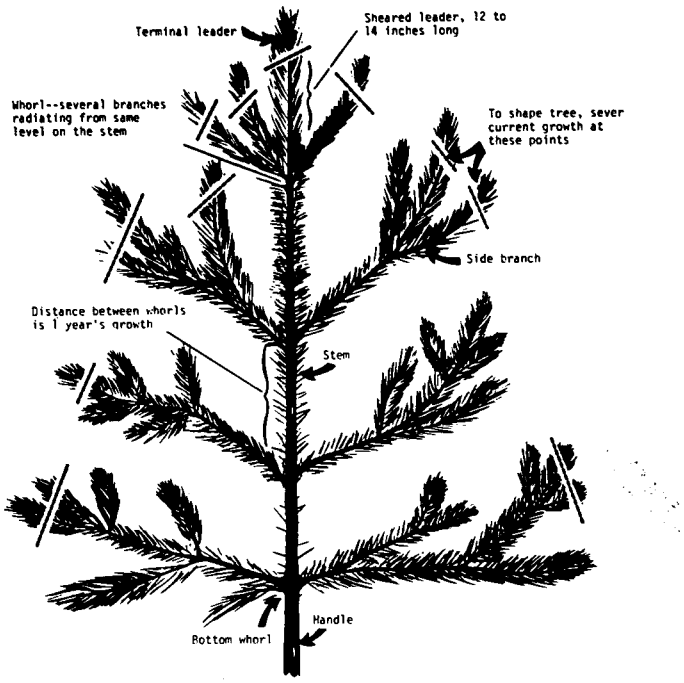
Shear all pines during the active growth stage in late spring and early summer when new growth is still soft and succulent. The most favorable time is the 10 to 14 days before height growth terminates and the new wood hardens. Since Minnesota has a seasonal variation from south to north, begin shaping about mid-June in southern counties and during the 1st or 2nd week of July in northern counties.

Shearing at the proper time causes a new cluster of buds to form around and immediately below the cut surface. Shearing too early results in a superabundance of buds and irregular growth the following year, particularly with Scotch pine. If you shear in late summer after the new wood hardens, one or more of the following occurs: too few buds form, buds don't form until the following year, the cut shoot dies back, or growth is stunted the following season.

If you have both Norway or Scotch pine in the same plantation, shape the Norway pine first--as soon as the season's new growth permits. Although you have more freedom in choosing the time to shape Scotch pine, avoid early season shearing because it results in profuse bud formation and irregular growth.

How To Shear

You may use a variety of tools to shape conifers. Most growers use 8- to 10-inch hedge shears or lightweight slicing knives with 14- to 16-inch blades. Hand pruners and pocket knives do a precise but slow job. Machetes and sickles are fast but do crude work. Power clippers also are fast tools to use, but initial equipment costs are high.



You must first cut back the terminal leader to the desired length, usually 12 to 14 inches. Then clip lateral branches in the terminal or top whorl so that they are approximately one-half to two-thirds the length of the shortened leader. Always clip every lateral in this uppermost whorl; otherwise the next year's growth will be irregular. Then shear the new growth over the rest of the tree to get an inverted cone.

A premium Christmas tree--Scotch pine with good form on all four sides, uniformly thick foliage, and a straight stem--the result of timely annual shaping.

Occasionally when shearing a tree to form, you may have to cut side branches back of the current season's growth. Random cutting in old branch wood causes unsightly dead stubs. To prevent this condition, make these cuts at the junction with and just ahead of a live side branch.

When clipping the terminal leader, cut at a 45-degree angle. This practice reduces the probability of multiple leaders the next season because one of the new buds probably will be higher than the others.

While cutting back the terminal leader and shearing side branches, look for multiple stems. Multiple terminal leaders may result from a previous shearing. To correct this deformity and to insure a central main stem, clip out all but one terminal leader with hand pruners or a pocket knife. Of course, choose the straightest and strongest stem.

Whether or not to shear trees in the summer preceding harvest cutting is debatable. Although some consumers prefer a closely sheared, compact form, others want a more natural tree. Letting trees grow out the year you market them restores the natural appearance desired by most Upper Midwestern consumers. However, you may have to clip an occasional lateral branch or extra long leader to improve the tree's form.

SHAPING SPRUCE AND FIR

Spruce and fir trees normally start growing rapidly about the 3rd to 5th year after planting. If this accelerated top growth is not checked, the trees generally become narrow and sparsely branched. Shearing moderates this natural trait.

Unlike pines, spruce and fir naturally develop buds along the length of the top leader and side terminals. Therefore, you don't have to time the shearing operation to cause bud formation. In fact, you may shear spruce and fir at any time of the year and get good results without injuring them. However, the dormant season (October to April) is recommended for shearing because (1) your workload is spread out and (2) the shaping cuts are usually hidden by the next season's growth.

To start shaping, first cut back the terminal leader 8 to 12 inches above the next lower whorl of branches. Make the cut at an angle about one-fourth to one-half inch above a fully developed, live, single bud. It is this bud which will develop next season's terminal shoot. If you cut above a cluster of two or more buds, you encourage the development of multiple leaders. To keep a normal taper (cone shape) and thicken the foliage, then shear lateral branches over the entire tree without regard to individual branches. Cut off branches near the ground below a well formed basal whorl to produce a clean handle.

More than one leader sometimes will shoot up from a severed terminal leader in the spring following shearing. In followup annual shearings, select one leader to form the main stem, cut it back to the appropriate length, and remove the other leaders at the base of the whorl. Also shear lateral branches to maintain a satisfactory taper.

Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8 and June 30, 1914, in cooperation with the U. S. Department of Agriculture. Luther J. Pickrel, Director of Agricultural Extension Service, University of Minnesota, St. Paul, Minnesota 55101. 3M— 3-67